

the PWM generator and controller box 36. Such circuitry is well known in the power supply art, especially in the DC/DC converter art, as evidenced by US Patent No. 6,498,461 that is incorporated by reference into the present application. Likewise, a DC/DC controller is shown in box 36 and that is also well known in the power conversion art, and is likewise shown in the '461 patent incorporated by reference into the instant specification. As for the demodulation circuitry, Applicant respectfully points to an exemplary demodulation circuitry 32''' shown in Figure 3C. Indeed, Applicants respectfully submit that modulation/demodulation circuitry is well known in the art, and all such alternatives have been contemplated within the spirit and scope of the instant invention. Thus, it is respectfully submitted that the Examiner's objections to the drawings as not containing this subject matter is in error, and should be withdrawn.

The specification has been amended to include reference to the '461 patent in accordance with the Examiner's objection thereto.

Turning now to the objections of the art, claims 1-3 and 5 stand rejected under 35 USC §103 as being unpatentable over Gaza.

Importantly, the Examiner acknowledges that Gaza does not disclose or suggest including the PWM generator into the AC/DC adapter 28. Applicants agree with the Examiner's characterization of Gaza.

In contrast, Applicant's invention of independent claim 1 requires a portable electronic device that includes a charge controller and an external AC/DC adapter that includes a PWM generator. Independent claim 1 further requires "wherein only said external AC/DC adapter, among said AC/DC adapter and said charge controller, comprises said PWM generator." Claims 2-5 depend directly from Applicant's invention of independent claim 1, and thus, must be read as incorporating the limitations of claim 1, as amended.

The criticality of providing the PWM generator only in the AC/DC adapter is described in the specification. For example, Applicants respectfully draw the Examiner's attention to the instant specification, page 4, lines 6-19: "in the exemplary embodiments, the need for a PWM generator and controller, as well as power switches and a DC/DC converter are eliminated in the charger circuit, thereby economizing power topologies, as well as removing heat generating portions of a conventional battery circuit to the external AC/DC adapter." Thus, not only does the invention of claim 1 provide for fewer components and greater economy of scale, removal of heat from portable electronic devices in most applications is a critical consideration. Such issues are resolved by the present invention.

Thus, it is respectfully submitted that the Examiner's rejections of claims 1-3 and 5 under 35 USC §103 as being obvious in view of Gaza is in error, and should be withdrawn.

Claim 4 stand rejected under 35 USC §103 as being unpatentable over Gaza in combination with Irvin. The Examiner points to Irvin as disclosing an antennae system where signals are demodulated and decoded by a receiver. Significantly, however, Irvin does not disclose or suggest a power management topology as required by Applicant's invention of independent claim 1, and discussed above in detail.

Thus, it is respectfully submitted that the combination of Gaza and Irvin could not render obvious Applicant's invention of independent claim 4, since the invention of independent claim 4 incorporates the limitations of claim 1, as amended. It is therefore respectfully submitted that the Examiner's rejection of claim 4 under 35 USC §103 as being unpatentable over Gaza in combination with Irvin is in error, and should be withdrawn.

Having dealt with all the objections raised by the Examiner, it is respectfully submitted that the present application is in condition for allowance. Thus, early allowance is earnestly solicited.

If the Examiner desires personal contact for further disposition of this case, the Examiner is invited to call the undersigned Attorney at 603.668.6560.

A check in the amount of \$110.00 is included herewith to cover a one month extension of term for large entity, thereby extending the term for response to the present official action from March 20, 2003 to April 20, 2003. No separate petition for an extension of term is believed necessary, but the office should consider the present amendment and an accompanying a check as a formal petition, if necessary.

In the event there are any fee deficiencies or additional fees are payable, please charge them (or credit any overpayment) to our Deposit Account No. 50-2121.

Respectfully submitted,



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**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, Washington, DC 20231 on April 18, 2003 at Manchester, New Hampshire.

By: April Davis

MARKED COPY OF CLAIMS SHOWING CHANGES MADE

1. A power management topology for a portable electronic device, comprising:  
  
a portable electronic device comprising a rechargeable battery and a charge controller comprising circuitry generating a feedback signal indicative of battery [voltage and/or battery] charging [current]power; and  
  
an external AC/DC adapter generating a DC source signal from an AC source, said adapter comprising a PWM generator generating a PWM signal, and a controller[, said controller] receiving said feedback signal and adjusting [the]a duty cycle of said PWM signal thereby adjusting the [voltage and/or current value]power of said DC source signal[.]  
  
wherein only said external AC/DC adapter, among said AC/DC adapter and said charge controller, comprises said PWM generator.
  
5. A topology as claimed in claim 1, wherein the charge controller further comprising circuitry to generate a feedback signal indicative of power requirements of said portable electronic device and battery charge current.